Amendments to the Claims:

The listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A ~~chemical compound or composition comprising a~~ peptide[, comprising] ~~, wherein~~:

(a) said peptide comprises a β-strand-forming section, said section ~~of peptide~~ consisting of four to sixteen consecutive α-L-amino acid residues and encompassing at least 50% of the length of said peptide, none of the α-L-amino acid residues within the β-strand-forming section ~~of peptide~~ being proline, except at very ends of the β-strand-forming section ~~of peptide~~;

(b) each of the consecutive α-L-amino acid residues in the β-strand-forming section ~~of the peptide~~ has a side chain;

(c) said β-strand-forming section ~~of peptide~~ forms a β-strand having a peptide backbone which takes on the form of an extended ribbon having two edges, a first edge which associates with a target β-strand formed by a separate peptide-containing molecule and a second edge, such that the NH and CO components of successive α-L-amino acid residues lie along ~~either~~ the first edge ~~or~~ [and] the second edge of the ribbon, the first edge and second edge corresponding to two opposite edges of the plane of the ribbon, and the side chains of the consecutive α-L-amino acid residues being alternatively above or below the plane of the ribbon ~~peptide planes of the peptide backbone~~;

(d) at least one of the Nα-atoms within the peptide backbone of the β-strand is Nα-substituted with an Nα-substituent, such that one or more Nα-substituent lie along only the second edge and sterically hinder the association of the second edge with another β-strand; and

(e) the first edge remains free of Nα-substituents, and is not prevented from associating with the target β-strand formed by a separate peptide-containing molecule.

2. (currently amended) The chemical compound or composition according to claim 1, wherein, when there are two or more successive Nα-substituted amino acid residues, no two successive Nα-substituted amino acid residues in the β-strand-forming section ~~of peptide~~ are separated by more than 3 consecutive Nα-unsubstituted amino acid residues.

3. (currently amended) The chemical compound or composition according to claim 1 wherein, when there are two or more successive Nα-substituted amino acid residues, successive Nα-substituted α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ are separated from each other by single Nα-unsubstituted α-L-amino acid residues, such that the β-strand-forming section ~~of peptide~~ comprises an alternating sequence of Nα-substituted and Nα-unsubstituted α-L-amino-acid residues.

4. (previously presented) The chemical compound or composition according to claim 1 wherein the Nα-substituent of each Nα-substituted α-L-amino acid residue in the β-strand-forming section ~~of peptide~~ sterically allows or promotes the β-strand-forming section ~~of peptide~~ to form a β-strand, and sterically hinders the association of said second edge of that β-strand with any other β-strand.

5. (currently amended) The chemical compound or composition according to claim 4, wherein the Nα-substituent of each Nα-substituted α-L-amino acid residue in the β-strand-forming section ~~of peptide~~ sterically hinders the action of proteolytic enzymes on the β-strand-forming section ~~of peptide~~.

6. (currently amended) The chemical compound or composition according to claim 4, wherein the Nα-substituent of each Nα-

substituted α-L-amino acid residue in the β-strand-forming section ~~of peptide~~ is selected from the group consisting of:

a fluorine atom or an OH group;

a group that is connected to the Nα atom by an oxygen atom within said group;

a group that is connected to the Nα atom by a CH2 subgroup within said group;

a methyl or ethyl group, or some other alkyl or aliphatic group;

a substituted or unsubstituted benzyl group, or some other arylmethyl group;

an acetylated or acylated 2-hydroxy-4-methoxybenzyl (AcHmb) group; and

an acylated or unacylated 2-hydroxybenzyl (AcHb/Hb) group.

7. (currently amended) The chemical compound or composition according to claim 1, wherein the side chain of each α-L-amino acid residue in the β-strand-forming section ~~of peptide~~ allows or promotes the β-strand forming section ~~of peptide~~ to form a β-strand.

8. (currently amended) The chemical compound or composition according to claim 7, wherein the side chain of one or more α-L-amino acid residues in the β-strand forming section ~~of peptide~~ is that of an amino-acid residue having a β-sheet propensity of greater than 1.00.

9. (currently amended) The chemical compound or composition according to claim 7, wherein the side chain of one or more α-L-amino acid residues in the β-strand forming section ~~of peptide~~ is selected from the group consisting of:

an atom or group that allows or promotes the β-strand-forming section ~~of peptide~~ to associate as a β-strand with the target β-strand and thereby form a stable β-sheet complex; and

an atom or group that forms a hydrophobic or electrostatic interaction, hydrogen bond, or other favorable non-covalent interaction with the neighboring side chain of the target β-strand in a β-sheet complex comprising the target β-strand and the β-strand forming section ~~of peptide~~.

10. (currently amended) The chemical compound or composition according to claim 7, wherein the side chain of one or more α-L-amino acid residues in the β-strand forming section ~~of peptide~~ is selected from the group consisting of:

a hydrophobic group, or a group that has a considerable hydrophobic portion;

a branched or unbranched alkyl or aliphatic group;

a group that is branched at its connecting β-carbon atom;

an aromatic group;

an acidic or basic group; and

an amide- or hydroxyl-containing group.

11. (currently amended) The chemical compound or composition according to claim 1, wherein the side chain of one or more α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ hinders the stacking of β-sheets.

12. (currently amended) The chemical compound or composition according to claim 11, wherein the side chain of one or more α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ extends beyond the neighboring side chains in the β-strand.

13. (currently amended) The chemical compound or composition according to claim 1, wherein the side chain of one or more α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ allows the compound or composition to be traced or detected.

14. (currently amended) The chemical compound or composition according to claim 13, wherein the side chain of one or more α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ is selected from the group consisting of:

an atom or group that contains a radioactive or magnetically active nucleus;

that of phenylalanine or tyrosine with one or more radioactive or magnetically active iodine or other halogen atoms substituted onto the aromatic ring;

a fluorescent, colored, or other spectroscopically detectable group;

a group which contains an unpaired electron and thereby acts as a spin label;

a group which contains the 2,2,5,5-tetramethyl-1-pyrrolidinyloxy (PROXYL) group; and

a group which contains the 2,2,6,6-tetramethyl-1-piperidinyloxy (TEMPO) group.

15. (currently amended) The chemical compound or composition according to claim 1, wherein the side chain of one or more α-L-amino acid residues in the β-strand-forming section ~~of peptide~~ is selected from the group consisting of the side chain of:

any naturally occurring α-L-amino acid or synthetic derivative thereof; alanine; serine; cysteine; threonine; valine; leucine; isoleucine; methionine; phenylalanine; tyrosine; tryptophan; glutamine; asparagine; glutamate; aspartate; histidine; lysine; arginine; ~~and~~ *tert*-leucine ~~or~~ and β-hydroxyvaline.

16. (currently amended) The chemical compound or composition according to claim 1 wherein the target β-strand is formed by the Alzheimer's Aβ peptide, and the β-strand-forming section ~~of peptide~~ binds specifically as a β-strand to part or all of the KLVFFAE sequence (SEQ ID NO:3) within the target β-strand in the parallel orientation, thereby forming a parallel β-sheet complex wherein consecutive residues of the β-strand-forming section ~~of peptide~~ lie directly opposite consecutive residues of ~~the KLVFFAE sequence~~ Seq ID NO:3 in the same order.

17. (currently amended) The chemical compound or composition according to claim 1 wherein the target β-strand is formed by the Alzheimer's Aβ peptide, and the β-strand-forming section ~~of peptide~~ binds specifically as a β-strand to part or all of the KLVFFAE

sequence (SEQ ID NO:3) within the target β-strand in the antiparallel orientation, thereby forming an antiparallel β-sheet complex wherein consecutive residues of the β-strand-forming section ~~of peptide~~ lie directly opposite consecutive residues of ~~the KLVFFAE sequence~~ Seq ID. NO:3 in reverse order.

18. (currently amended) The chemical compound or composition as claimed in claim 17 wherein the β-strand-forming section ~~of peptide~~ comprises at least a four-residue segment of the amino acid sequence aa1-aa2-aa3-aa4-aa5-aa6-aa7, or a mimic thereof, where:

aa1 is α-L-lysine or α-L-arginine;

aa2 is α-L-leucine or α-L-lysine, or an Nα-substituted form thereof;

aa3 is α-L-valine or α-L-isoleucine;

aa4 is α-L-phenylalanine or α-L-tyrosine, or an Nα-substituted form thereof;

aa5 is α-L-phenylalanine or α-L-tyrosine;

aa6 is α-L-alanine, α-L-threonine, α-L-valine, α-L-isoleucine, α-L-leucine, α-L-methionine, α-L-lysine, or α-L-histidine, or an Nα-substituted form thereof;

aa7 is α-L-tryptophan or α-L-glutamate.

19. (currently amended) The chemical compound or composition according to claim 1 wherein the β-strand-forming section ~~of peptide~~ is preceded by, followed by, or otherwise attached to a distinct membrane-penetrating section ~~of peptide~~ which enables the β-strand-forming section ~~of peptide~~ to cross cell membranes, the blood-brain barrier or any other biological barrier.

20. (currently amended) The chemical compound or composition according to claim 19 wherein the side chain of each residue in the membrane-penetrating section ~~of peptide~~ is selected from the group consisting of:

a basic or hydrophobic group; and a side chain of alanine, valine, leucine, isoleucine, methionine, phenylalanine, tyrosine, tryptophan, proline, histidine, lysine, and arginine.

21. (currently amended) The chemical compound or composition as claimed in claim 19 wherein the membrane-penetrating section ~~of peptide~~ is made resistant to enzyme-catalysed proteolysis by the incorporation of α-D-amino acid residues and/or Nα-substituted amino acid residues.

22. (currently amended) The chemical compound or composition according to claim 1 wherein the β-strand-forming section ~~of peptide~~ has a free or acylated N terminus and a free, amidated, or esterified C terminus, or forms part of a larger peptide which has a free or acylated N terminus and a free, amidated, or esterified C terminus.

23. (currently amended) The chemical compound or composition according to claim 1 wherein the β-strand-forming section ~~of peptide~~ is attached to another functional component.

24. (currently amended) The chemical compound or composition according to claim 23, wherein the functional component is selected from the group consisting of:

a component which strengthens the binding of the β-strand-forming section ~~of peptide~~ to the target β-strand;

a component which enhances specificity of association of the β-strand-forming section ~~of peptide~~ with the target β-strand;

a component which enables the β-strand-forming section ~~of peptide~~ to cross cell membranes, the blood-brain barrier or any other biological barrier;

a component which causes the ~~compound/composition~~ peptide to target specific organs, cells, or molecules;

a component which allows the ~~compound/composition~~ peptide to be traced or detected;

an atom or group that contains a radioactive or magnetically active nucleus;

a fluorescent, colored, or other spectroscopically detectable group;

a group which contains an unpaired electron and thereby acts as a spin label;

a group which contains the 2,2,5,5-tetramethyl-1-pyrrolidinyloxy (PROXYL) group or the 2,2,6,6-tetramethyl-1-piperidinyloxy (TEMPO) group;

a solid matrix, resin, or support;

an enzyme, hormone, antibody, transcription factor, or other protein molecule;

a group that binds specifically to a particular protein; and

a cytotoxic molecule.

25. (currently amended) The chemical compound or composition according to claim 23, wherein attachment of the β-strand-forming section ~~of peptide~~ to the functional component is by means of: an amide or ester linkage formed with the C-terminus of the β-strand-forming section ~~of peptide~~; or an amide linkage formed with the N-terminus of the β-strand-forming section ~~of peptide~~; or an amide linkage formed with a carboxyl or amino group of a side chain within the β-strand-forming section ~~of the peptide~~; or an ester linkage formed with a carboxyl or hydroxyl group of a side chain within the β-strand-forming section ~~of peptide~~; or a disulphide bridge formed with a thiol group of a side chain within the β-strand-forming section ~~of the peptide~~.

26. (currently amended) The chemical compound or composition according to claim 1 wherein the β-strand-forming section ~~of peptide~~ associates with a target β-strand comprising the amino-acid sequence KLVFF (SEQ ID NO:1).

27. (currently amended) The chemical compound or composition according to claim 1 comprising one or more components which mimic the structure and action of said β-strand-forming section ~~of peptide~~, wherein the components are formed by replacing one or more of the backbone peptide groups or side-chain groups of the β-strand-forming section ~~of peptide~~ by another chemical group of similar

stereochemistry and ability to form favorable non-covalent interactions with the target β-strand.

28. (currently amended) The chemical compound or composition according to claim 27 wherein:

(a) one or more of the N-unsubstituted backbone peptide groups (CONH) of the β-strand-forming section ~~of peptide~~ is/are each replaced by any of the following groups: CSNH (thioamide); COO (ester); CSO or COS (thioester); CSS (dithioester); $COCH_2$ (ketone); $CSCH_2$ (thioketone); SO_2NH (sulphonamide); $SOCH_2$ (sulphoxide); SO_2CH_2 (sulphone); SO_2O (sulphonate); and/or

(b) one or more N-substituted backbone peptide groups (CON(R))of the β-strand-forming section ~~of peptide~~ is/are replaced by one of the following N- or C-substituted groups: CSN(R) (thioamide); COCH(R) (ketone); CSCH(R) (thioketone); $SO_2N(R)$ (sulphonamide); SOCH(R) (sulphoxide); $SO_2CH(R)$ (sulphone), wherein R is equivalent to the original Nα substituent; and/or

(c) one or more of the side chains of the β-strand-forming section ~~of peptide~~ is/are each replaced by another group having similar stereochemistry or arrangement of polar and non-polar atoms, maintaining those particular features which are essential for association with the target β-strand.

29 - 42 (cancelled)

43. (previously presented) A pharmaceutical ~~compound or~~ composition according to claim 1. comprising a peptide

44 - 45 (cancelled)

46. (previously presented) The chemical compound or composition according to claim 1, wherein any two successive Nα-substituted α-L-amino acid residues are separated by an odd number of consecutive Nα-unsubstituted α-L-amino acid residues.

47. (currently amended) A chemical compound or composition comprising a peptide, wherein:

(a) said peptide comprises a β-strand-forming section ~~of peptide~~ consisting of four to sixteen consecutive α-L-amino acid residues and encompassing at least 50% of the length of said peptide, none of the α-L-amino acid residues within the β-strand-forming section ~~of peptide~~ being proline;

(b) each of the consecutive α-L-amino acid residues in the β-strand-forming section ~~of the peptide~~ has a side chain;

(c) said β-strand-forming section ~~of peptide~~ forms a β-strand having a peptide backbone which takes on the form of an extended ribbon having two edges, a first edge which associates with a target β-strand formed by a separate peptide-containing molecule and a second edge, such that the NH and CO components of successive α-L-amino acid residues lie along either the first edge or the second edge of the ribbon, the first edge and second edge corresponding to two opposite edges of the plane of the ribbon, and the side chains of the consecutive α-L-amino acid residues being alternatively above or below the plane of the ribbon ~~peptide planes of the peptide backbone~~;

(d) at least one of the Nα-atoms within the peptide backbone of the β-strand is Nα-substituted with an Nα-substituent, such that one or more Nα-substituent lie along only the second edge and sterically hinder the association of the second edge with another β-strand; and

(e) the first edge remains free of Nα-substituents, and is not prevented from associating with the target β-strand formed by a separate peptide-containing molecule.